FISHERY RESEARCH

THE HISTORY OF FISHERY MANAGEMENT AND RESEARCH IN IDAHO

Presented To IDFG In-Service Training School

May 2003

Prepared by:

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Retired

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ABSTRACT

This presentation highlights development of fishery management and research in Idaho to 1980. It is taken from the Idaho Fish & Game Department's annual reports, fishery bureau reports, and from my own observations. It does not continue past 1980, since I left fisheries to become an administrator in 1981. I see a systematic improvement in knowledge and techniques and a growing maturity in both management and research over the years as each cohort of fishery workers builds on the base presented to them by their forerunners.

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EDITOR'S NOTE

This historical report was prepared upon request by the Fisheries Bureau for verbal presentation at the 2003 In-Service Training School. At that ISTS School, the author discussed the evolution of fishery research and management from 1899 to 1980, the year he left the Fisheries Bureau to become a Regional Supervisor. Despite (in his own words!) being allotted too little time to prepare for the talk, his report was deemed so full of little-known research/management efforts and perspective, that Jerry was eventually persuaded to provide us with a finalized version. Jerry Mallet is uniquely qualified to write such a historical report. His career began in 1955 when he started in the hatchery system and concluded in 2000 as the IDFG Deputy Director. During the first quarter century of this long career, Jerry worked for IDFG as a Fish Hatchery Helper, Fishery Biologist, Area Fishery Biologist, Regional Fisheries Biologist, Regional Fisheries Manager, Anadromous Fisheries Manager, and Fisheries Research Supervisor.

MANAGEMENT AND RESEARCH

We first need to define management and research. In general terms, management speaks of control and direction and the judicial use of means to accomplish an end. Research is to investigate thoroughly, a careful and diligent search, studious inquiry or examination, investigation or experimentation aimed at the discovery and interpretation of facts. Research is generally considered to have two types: basic research and applied research.

THE BEGINNING

"On the fifth day God said, "Let the waters team with fish and other life…." "And God looked at them with pleasure and blessed them all." "Multiply and fill the oceans, he said." Obviously, there was no need for fishery management and research at that time. Everything was in balance and growing. "On the sixth day, God made man." "On the seventh day God rested." Had God rested on the sixth day, there would not have been any reason to have fishery management and research. As it turned out, earth was stuck with man, and he would create a need for fishery management and research.

When did fishery research and management start in Idaho? It obviously started with the Native Americans. Because of the abundance of fish and low population of humans, the need for management was not too great. However, the natives obviously studied the behavior of fish, because their lives depended upon them. Some of this research and management came easy by simple observation. In other cases, it came through the school of hard knocks. Some tribes placed the first two salmon over their weir to spawn and harvested the rest. After four years, no salmon returned to that stream, and they were forced to move to a new stream. I suspect they quickly learned conservation.

The first fishery research in Idaho (after the natives) probably was by Meriwether Lewis on the Corps of Discovery in 1804-1806. One of the major objectives of the Lewis and Clark Expedition was to add to our scientific knowledge. Lewis collected specimens in the Salmon, Lochsa, and Clearwater rivers.

The Early Fish & Game Department: 1899-1938

It was 93 years after the Corps of Discovery, in 1899, when Idaho became a state and created its first Fish & Game Department. The department had one permanent employee, the State Fish & Game Warden. Charles Arbuckle was hired to fill that position. He had a budget of $300 to cover traveling expenses, office rent, printing, postage, and all other legitimate expenditures. He worked hard at getting a deputy game warden in each part of the state to assist him. They were furnished with no equipment, and their remuneration depended upon convictions and payment of fines. Keep in mind that man had not yet figured out airplanes, and autos were limited to a few experimental types that were built in the style of horse carriages. It was not easy to get deputy game wardens that had a personality suited to the job and would work for speculative wages. The State Fish & Game Warden listed his major accomplishment in his first years as stopping the shipment of game and trout from Idaho to other states and sale of such in open markets in the state. In a single instance, traffic in the taking and shipment of enormous quantities of trout from Henrys Lake was estimated from 50,000-90,000 pounds every winter. These fish had been marketed to Salt Lake City, Butte, and other locations. The state did not require hunting and fishing licenses, but Mr. Arbuckle said, "I have been informed from

reliable sources that over 1,000 non-resident sportsmen visit this state annually to hunt and fish." He also asked for a federal hatchery at Henrys Lake and asked for some limitation of catch. Since Idaho had no Fish & Game Commission, his requests were directed to the legislature. He was also concerned about fish losses down irrigation canals.

In 1903, the Wright Brothers made the first airplane flight, and autos were still experimental with horse and buggy carriage bodies.

In 1905, a hunting and fishing license was required at a cost of $1. In 1905, the department sold 957 non-resident licenses and 13,509 resident licenses. In 1906, the totals increased to 1,445 and 16,267, respectively. Idaho ranked second in the nation per capita in number of licenses issued. State law now requires that anyone diverting water from any natural streams or other natural sources shall erect and maintain, in good order, suitable screens or paddle wheels. Revolving fish screens were developed for irrigation ditches. A fishway was constructed over a dam in Georgetown Canyon in Southeastern Idaho. Citizens were damming off sections of streams in Fremont County and planting the resulting fish ponds. The State Fish & Game Warden forced native trout to be released and limited these ponds to brook trout. A lake outlet in Kootenai County was screened to prevent bass from being lost. Citizens were dynamiting fish in the North Fork of the Snake River and seining cutthroat spawners in St. Charles Creek as they left Bear Lake. The State Fish & Game Warden had his hands full.

In 1907, the Legislature authorized the department to erect and maintain a fish hatchery in the state for the purpose of artificial propagation and distribution of food and commercial fishes. That same year, the department constructed its first fish hatchery at Hayspur, and in 1908, it was followed by hatcheries at Sandpoint and Warm River. The State Fish & Game Warden hired personnel to staff these hatcheries. He also recommended regulations to protect spawning fish at Bear Lake.

The State Fish & Game Warden recommended in 1912 that the law be changed to hire a "Superintendent of Fisheries" to be appointed by the Warden. The Superintendent of Fisheries would appoint the Superintendent at each hatchery and such assets as may be necessary. Keep in mind that each time Idaho had a new governor, he would appoint a new State Fish & Game Warden, who would then appoint new personnel at each hatchery. The State Warden states that, "Fish work has been done in a haphazard manner without considering the results. Some of our best fishing streams have been seriously damaged in the taking of spawn, year after year." Despite this request, it would not be until seven years later when such a position would be authorized. The State Warden also recommended that the employees of the department be covered by civil service, as were the federal employees at the time. His rationale was as follows: "The U.S. Government has expert men in the field collecting data on conditions existing in the waters of the country and in the last few years have visited the lakes and streams of this state, analyzed the water, taken the temperatures, and the kind of food therein." "And it is important that we follow the examples of the U.S. Government in this line of work by placing the department and Idaho on a scientific basis, and in order to do so, we must have men who have made this a study and are familiar with the needs and requirements of this line of work, regardless of his political affiliations, and to this end, I would recommend that, in as far as possible, we follow the lines adopted by the U.S. Government and many other states doing effective work, and place the members who are directly in the Fish & Game Department under a civil service ruling and retain them as long as they do good work." Despite this eloquent argument, department employees would not be placed under a civil service system until 26 years later. The State Warden also recommended that we eliminate the indiscriminate stocking

of fish in lakes and streams, look to control rough fish, and require fish screens and ladders. Modern day auto design occurs about this time, but the supply is very limited.

In 1913 and 1914, the bag limit of game fish was 20 pounds a day and 30 pounds in possession. Fish are weighed after they have been cleaned but with the heads intact. The State Warden recommends stream closures in March, April, and May to protect trout spawners. He makes the following statement in his annual report, “The operations of our hatcheries during the past two years have been, in the main, successful, but we will never reach the degree of success we should considering our natural advantages, as long as those in charge are changed with each Administration.” Coeur d’Alene Hatchery is built and operated with sportsmen funds. Henry Ford’s assembly line comes on line in 1914.

Seven years after it had been recommended by the State Warden, the Legislature authorizes the hiring of a Fish Commissioner in January 1919. Mr. George Isaac is hired and stationed at Pocatello. Ashton Hatchery comes on line that same year. Mr. Isaac reports in 1920: “Considerable research work was conducted during the past biennium of the game department in laying foundations for spawn taking and fish planting.” “After a careful survey of mountain lakes in the East Fork and Salmon River districts, several lakes were planted with natives (cutthroat) and rainbow trout during the fall of 1920.” “About 50 lakes were found with no fish due to natural barriers.”

The State Warden had the following comments in the 1923-24 biennial report. “Like anything else, what might have sufficed years ago or under different conditions, when our streams were well stocked, when we had a smaller population and not confronted with increased tourist travel and the prospect of depletion of our waters, will not answer at this day.” “From my preliminary inspection of such streams and lakes as I was able to visit in 1923, I became satisfied that considerable research work would be necessary to determine, primarily, the kind of species of fish best adapted to such streams and lakes.” “Little if anything had been done along these lines in the past when the opportunity presented itself for the state to secure the services of the best talent procurable in the United States until we engaged our present Fish Commissioner.” The Fish Commissioner centered his work in the Stanley basin lakes and high mountain lakes with a basic inventory and fish planting records. He also started looking at lakes in the head of the South Fork of the Payette River. Henrys Lake, Cascade, Grangeville, and Mackay hatcheries came on line in this biennium. There was still a concern for fish screens, fish ladders, and fish salvage.

During 1925-26, hundreds of possible hatchery sites and rearing pond locations were investigated throughout the state.

1929-30 marked 23 years of fish hatcheries in the state. Fish cultural work was said to still be in the experimental stage. New methods of propagation and handling have necessitated the use of new appliances and improvements in equipment to meet the changing methods. Hatchery fish are held to a larger size and released in streams in the fall before the roads become impassable. In the spring of 1930, 800,000 Great Lakes whitefish were released in Coeur d’Alene and Pend Oreille lakes. Golden trout were planted in high mountain lakes in the Sawtooth Mountains. Modern day Fish Hatchery Superintendents were hired and included Bud Ainsworth Sr., John Coleman, and Alan Clark, and they were still working in the 1960s and 1970s. I believe that Clark holds the department record for years served with 45.

The Hagerman Federal Fish Hatchery was built during the 1931-32 biennium after a push by the department for the federal government to assist the state in stocking fish in Idaho waters.

In 1937-38, the Fish Commissioner turned his attention to fish hatcheries. He stated, "I would like to see a new hatchery station on every important river drainage." Congress approves $500,000 for the study and improvement of fish conditions in the Columbia River drainage. There is hope that Idaho will get two new fish hatcheries out of this.

The Modern Fish & Game Department: 1939-The Present

The year of 1938 was a very important year for the department. Sportsmen ran a successful initiative to get major changes in the department on the 1938 ballot, and it was passed by Idaho's citizens on November 8, 1938. This occurred 26 years after the State Fish & Game recommended it. This initiative was to form a Fish & Game Department staffed by Civil Service employees and directed by a Commission. The chief officer of the department is now a director rather than a State Fish & Game Warden. It included a Fisheries Division with a Director of Fisheries and a State Fish Culturist. The appointments to the department, because of the initiative, resulted in the hiring of the first non-political appointments in the history of the department. Many of the Conservation Officers and Fish Hatchery Superintendents hired at this time were still working when I came to work for the department in 1955. This year was the first noted concern for stream pollution. Two major programs were initiated in the first two years of the new department. The department's biennial report discusses these programs. "To put into practice a firm belief that the scientific approach to fisheries problems is highly important, the Commission has, in cooperation with the U.S. Fish & Wildlife Service, sponsored investigative work designed to map out the spawning grounds of the Pacific Coast salmon and steelhead. "A program was inaugurated by the Commission to stock the warmer waters of the state, which were unsuitable for the propagation of trout, with species of fish adaptable to those waters." "Following the policy of the Commission, studies have been made of these waters to determine the species best adapted to each particular body of water." "Extreme care will be experienced in the planting of bass to prevent their migration into trout producing waters."

The year 1941 was memorable as World War II started with the bombing of Pearl Harbor. 1941-42 was also memorable for the department and the Fisheries Division. The position of Director of Fisheries was dropped and the State Fish Culturist now heads the Fisheries Division. The department hires its first two fisheries biologists during this biennium. Everett Grimes is assigned to Hagerman, and Tim Vaughn goes into the service before he can settle in the department. The department also employs a Non-game Fish Supervisor to remove non-game fish from state waters. Conservation Officers begin taking creel census, and the director feels compelled to explain this program. "Conservation Officers have a reason for their curiosity about what's in a fisherman's creel." "It is not primarily to pester the fellow on his bag limit, but to help him catch more next time." "By learning what the fisherman catches, kind of fish, size and where, the department can plan its stocking program to best advantage." There is a test of mine polluted water from Yankee Fork to compare fish survival in it with survival in clean water. The biennium also sees the stocking of exotic fish in many Idaho lakes. In 1941, Kamloops rainbow trout are released in Pend Oreille, Alturas, and Redfish lakes. One of the Kamloops released in Pend Oreille Lake will be caught as a 37 pound fish in 1947 and set a world record for sport caught rainbow. In 1942, kokanee are released in Coeur d'Alene, Priest, Alturas, and Redfish lakes and in Anderson Ranch Reservoir. The department hires Dr. Donaldson of the University of Washington as a consultant in 1941-42 to lecture to hatchery

staff and Conservation Officers about fish propagation, fish diets, fish diseases, stream and lake management, and fish identification.

A MAJOR STEP FORWARD

The modern era in fishery management and research started in 1946 when the department hired Jim Simpson to head the Fisheries Division as the State Fish Culturist. Jim was trained in fishery science. He would establish the scientific approach and work to modernize the state's fish hatcheries. Simpson had the following comments in the 1945-46 biennial report: "It is the consensus of fisheries workers throughout the United States that the value of fish hatcheries has been oversold to the sporting public." "Fish hatcheries do have a place in a fisheries program, but they cannot and should not be considered as the only asset toward producing better fishing and maintaining good fishing." "If we are to realize the fullest value of fish planted from our state fish hatcheries, it is necessary that species be planted in the proper environments." "As an aid toward this end, a catalog of the lakes and streams of the state is being prepared." "It is also planned that a pamphlet on Idaho fishes will be completed and published by the department." "A state fish collection will be made and a checklist prepared." When Simpson reported to work, he had two fisheries biologists on staff, one at Sandpoint and one at Hagerman.

During 1947-48, the department undertook the task of trying to rehabilitate the run of spring Chinook salmon in the Clearwater River. This run was destroyed when the Lewiston Dam was built with fish ladders that were not adequate during the summer flows. Salmon eggs were taken, and a small number of the resulting fish were stocked in the North Fork of the Clearwater River.

1949-50 was an important time in fisheries progress in the department. The department now has five fisheries biologists. Two are Fisheries Biologists and three are Area Fisheries Biologists. Area Fisheries Biologists were what is now called Regional Fisheries Managers. Major programs during this two-year period included the following: Extensive lake improvement programs were undertaken in which undesirable fish species were eradicated and replaced with desirable fish species. Six lakes were rehabilitated in 1949 and seven lakes in 1950. Major stream improvement programs were accomplished throughout the state. The first organized creel census programs were accomplished on Spirit, Twin, Hayden, and Henrys lakes and Island Park and Sublet reservoirs. Hatchery fish were tagged to determine return to the creel. This would become an ongoing program for many years. The most important event of this two-year period occurred in 1950 when the Dingell-Johnson legislation passed. The states would receive the funds from this program in 1951, and it marked the start of Idaho's intensive fishery management and research programs.

DINGELL-JOHNSON FUNDS ARRIVE IN IDAHO

Dingell-Johnson funds flow into Idaho in 1951-52, and it allows Idaho to place Area Fisheries Biologists in six areas of the state with hopes of placing a seventh in the near future. Idaho's first Area Fisheries Biologists were: Tim Vaughn in the Panhandle to be replaced by Paul Jeppson in 1952; Leon Murphy in the Clearwater; Monte Richards in the Western Region; Bob Irving in the Magic Valley; Paul Cuplin in Southeastern Idaho, and Don Andriano in the Upper Snake. It also allowed the department to undertake the following research projects:

1) Biological and Economic Fisheries Investigations of Pend Oreille Lake prior to construction of Albeni Falls and Cabinet Gorge dams; 2) Redd counts and the economics of salmon fishing; 3) Basic creel census of the Little Salmon River; 4) Size and timing of anadromous fish runs; 5) Redfish Lake sockeye salmon investigations; 6) Evaluation of effects of hydro construction on the Snake River; 7) Extend the range of golden trout in Idaho; 8) Acquisition of gravel pits near Caldwell for public fishing; and 9) Henrys Lake ecology study.

In 1953 and 1954, Dingell-Johnson funds continue to flow into the department and significant changes occur in the Fisheries Division. Idaho received $43,617 in l953 and $74,353 in 1954 from the D-J fund. The head of the Fisheries Division's title is changed from State Fish Culturist to Chief of Fisheries. The Division now has two major components: 1) Fish Production and Distribution, and 2) Investigations and Improvements. The long running F-32-R program (Tests for Increasing the Returns of Hatchery Fish) is initiated. This program will be ongoing and will examine various aspects of the hatchery fish program including size at release, timing of releases, exercised fish, etc. Studies at Pend Oreille Lake and with anadromous fish continue. A mountain lake project is undertaken as well as a program on rough fish control.

1955-56 are banner years for me. I come to work for the department in 1955 for the summer as a Fish Hatchery Helper at $240 per month. In 1956, I get my first permanent appointment as a Fish Hatchery Helper at $260 per month. Meanwhile, Idaho is allowed to participate in the Columbia River Program. This federal act is to aid restoration of anadromous fish in the Columbia River system. It was passed in 1946, but Idaho was not allowed to participate until 1956. The program was administered by the Bureau of Commercial Fisheries (to be renamed the National Marine Fisheries Service at a later date). The division conducts its first Statewide Fish Harvest Survey during this period. A random sample (7.5%) of fishing license holders is sent a questionnaire asking what they fished for and their catch. The return was 32% of the questionnaires sent. The Clearwater River Fisheries Studies were begun to evaluate the steelhead production and returns to the Clearwater drainage. Weirs and Kray-Meekin traps were fished in the tributaries, a harvest survey was conducted, and a mark-recovery of steelhead entering the Clearwater River was undertaken. A portion of the fish crossing Lewiston Dam was tagged, and recovery was attempted throughout the mainstem with 18' x 10' fyke traps.

In 1957-58, the Fisheries Division adds a seventh Area Fishery Biologist at Salmon, and that position is filled by Ted Bjorn. In the same year, the division establishes a Fishery Research Supervisor position, and that position is filled by Forest Hauck. The Research Supervisor is an advisor to the Chief on research matters but does not directly supervise the research staff.

During this period, the department starts to purchase fishing access. In 1957, the fish screen program begins with funds from the Columbia River Program. The legislature passes a law to allow the department to construct fish screens on waters with known problems of 125 cfs or less. The department also begins project F-34-R (Water Quality Investigations) which is a statewide inventory and investigation regarding type and location of water pollution. The department awards a contract to the University of Idaho for serological studies to distinguish steelhead progeny from resident rainbow trout. Pre-impoundment studies are undertaken in the Snake River for Brownlee Reservoir. The hatchery evaluation study continued with an evaluation of returns to the creel. Hatchery returns vary from 8.7–40.5 % with a mean of 21.6%. Intensive stream surveys are conducted on tributaries of the Lochsa and Selway rivers in preparation for the salmon reintroduction program. Tow nets are used to collect kokanee fry in Pend Oreille Lake. The division experiments with dynamite, rotenone, and reduced lake levels for spot treatment of squawfish spawners.

In 1959-60, the department uses toxaphene as an agent to eradicate undesirable fish. This practice is short-lived because of the danger of exposure to this chemical and its attribute of not dissipating in a reasonable time frame so desirable fish can be stocked. In 1959-60, the department conducted basic studies of the cutthroat population in the Middle Fork of the Salmon River. This study was the first to document significant annual migrations of cutthroat trout. The life history information collected led to the first reduction in fish limits to promote fishing-for-fun and to rebuild and maintain the cutthroat populations. The limit of cutthroat was reduced from 15 fish to three fish. I was fortunate to be the project leader on this project.

During 1961-62, the department builds Spring Valley Reservoir near Moscow. This reservoir is built specifically as a fishing lake, is 52 acres in size, and is held in place by a 45-foot dam. This is also the time that the salmon reintroduction program starts on the Selway and Lochsa rivers. Weirs and holding ponds are built at Decker Flat (spring Chinook), Bear Valley Creek (spring Chinook), and Stolle Meadows (summer Chinook). Fish are spawned at these sites, and the eggs are transferred to the Sweetwater Eyeing Station. Spring Chinook are collected at Bonneville Dam and transferred to Carson National Fish Hatchery for eyeing. Fall Chinook are collected at Brownlee Dam. Initially, the spring and summer Chinook are planted in open stream plants or in wire baskets in the Selway drainage, and this led to construction and use of incubation channels for the placement of the eyed eggs. The fall Chinook are placed in the lower Selway River at Fenn and in the Lochsa River. During this time period, the department funds a graduate study at the University of Idaho to study the distribution of adfluvial and fluvial cutthroat trout in the St. Joe River drainage. An evaluation study is also in place to evaluate the fish facilities at Brownlee and Oxbow dams. In order to evaluate the $1 million skimmer net (for collection of downstream salmon and steelhead migrants), the department sends Jim Graban (project leader) to a SCUBA school in Seattle, and he becomes the department's first qualified SCUBA diver. The department's fish transportation trucks have relied on recirculation of the water and taking on large amounts of ice to safely transport fish over long distances. The division begins studies into using an oxygen supply system and refrigeration to improve on fish survival. On a personal note, I go to the Panhandle as the Area Fishery Biologist.

The Cooperative Fishery Research Unit was established at the University of Idaho in 1963. Selway Falls fishway was constructed in 1963 and was followed by the fishway at Dagger Falls. The department obtained a storage right (conservation pool) of 50,000 acre feet of water in Lucky Peak Reservoir for winter releases into the Boise River. Idaho started production diet tests for hatchery feed in an effort to provide food that would produce better fish. In 1964, Rapid River Hatchery was built to transfer Snake River spring Chinook salmon to the Salmon River. Fisheries biologists received their first SCUBA training at Lava Hot Springs from Jim Graban (trained as part of his job as a fishery biologist at Brownlee) and Chuck White (a Conservation Officer at Bonners Ferry who had been a Navy Frogman). The Fishery Research Supervisor begins active supervision of the fishery staff.

In 1965, the department added McCall as the eighth region. Tom Welsh was appointed to the new management position. The division establishes a Fishery Management Supervisor (Stacy Gebhards) to oversee and supervise regional fishery managers. The division initiates a study to determine the effects of forest spraying on aquatic insects. A steelhead harvest evaluation is started from postcard questionnaires and steelhead cards. Snake River steelhead are released in the Pahsimeroi River. The research program emphasizes salmon and steelhead, large lakes and reservoirs, and the proper use of hatchery trout. In the wake of phenomenal growth of kokanee in Kootenay Lake that had been feeding on mysis shrimp; the

research section releases mysis shrimp into Priest Lake as an experimental program to determine if this forage source will produce large kokanee in Priest Lake.

The department adds another fishing reservoir in 1967 with the construction of Horsethief Reservoir near Cascade. The division initiates an evaluation of fish populations in unaltered and in altered stream sections. It is found that unaltered stream sections contain 10 times the number of game fish and 14 times the weight of game fish when compared with altered stream sections. The management section produces a stream classification map in 1968. The division contracts with the University of Idaho for a graduate program that will produce: 1) A Study of Angler Preferences, Behavior and Opinions; and 2) An Economic Analysis of Idaho's Fisheries. The division decides to release mysis shrimp to lakes and reservoirs around the state. A follow-up study of the Middle Fork of the Salmon River leads to catch-and-release regulations on that stream. Incubation channels are constructed on three tributaries of Priest Lake in an effort to increase cutthroat abundance in that lake. Trout are exercised in hatchery raceways by lowering the water level to a rapid flow-through situation in an effort to increase survival of rainbow trout released in streams. A squawfish control program is started in Cascade Reservoir that uses squoxin and trapping of spawning adults with weirs.

During 1969-70, the major activity was the pre-impoundment studies on the North Fork of the Clearwater River in 1969 regarding the impeding construction of Dworshak Dam. The division contracted with the Idaho Cooperative Fish Unit to study the effects of special regulations in the St. Joe River (Trophy Regulations) and in Kelly Creek (Catch-and-Release).

Because of the workload with anadromous fish, the division created and filled an Anadromous Fishery Supervisor position. I filled this position in the fall of 1969.

During 1971-72, minimum steam flow work starts with the development of a methodology for determining minimum stream flows and the development of a list for investigation. The Idaho Stream Protection Act is passed by the legislature as a result of the department's studies on stream alterations and an intense campaign to bring this to the public's attention. Fintrol is used as a fish eradication tool in 1972. I move to Fishery Research Supervisor and Dave Ortmann replaces me as Anadromous Fishery Supervisor.

1973-74 are transition years for the division. In 1973, the department is reorganized into six regions with a regional supervisor supervising all activities and personnel in the region. The two exceptions are research and hatcheries, which remain under the supervision of the division that is now called the Fishery Bureau. Program control is to remain with the bureaus and program implementation with the regions. The Fishery Management Supervisor now acts as an advisor to the Regional Fishery Managers. The legislature passes a needed license increase in 1974 that was sponsored by the Idaho Wildlife Federation and lobbied for in 1973. The fisheries management and research staff now stands at eight Regional Fisheries Managers and nine Fishery Research Biologists. The research section starts an evaluation of the Snake River steelhead that were transferred to the Salmon River. This study looked at the survival of various size smolts, the timing of smolt releases, and the use of rearing and acclimation ponds. Echo sounding of kokanee populations started at Pend Oreille Lake. In this pre-personal computer era, a programmable calculator was used to expand echo sounding sample to total population. In 1974, northern pike arrive in North Idaho. Meanwhile, at Priest Lake, the state record for kokanee is broken three times in five days (5 pounds; 5 pounds, 5 ounces; and 6 pounds, 6 ounces). These fish had been feeding on mysis shrimp.

In 1975-76, Idaho joined the U.S. Fish & Wildlife Service and other northwest states in an effort to register Squoxin for use in fish eradication. The effort was not successful and the use of Squoxin was terminated. In 1976, there was a follow-up on earlier work done on the Middle Fork of the Salmon River showing that the catch-and-release regulations had produced larger fish with two times the number of fish over 12 inches in length. The bureau built a trawler and assigned it to Pend Oreille Lake to assist in the echo sounding surveys.

In 1977, the bureau conducted a follow-up Angler Preference Survey. Catch-and-release regulations were established on the Lochsa River above Boulder Creek to rebuild the cutthroat population. The area below Boulder Creek was left with general regulations and hatchery rainbow releases to make the program palatable to the public. By 1978, the cutthroat population above Boulder Creek was already showing signs of recovery.

SUMMARY

I end my summary of fishery management and research at this point and leave the subsequent years to someone who has been involved with the fishery program during this period.

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